

Habitat restoration in the Valencian Community

Deltoro, V.^{1*}, García Pereira, R², Justicia Correcher, E.²,
Jiménez Pérez, J.¹

¹Servicio Vida Silvestre Red Natura 2000. GVA.

²Dept. Servicios. VAERSA-GVA.



**GENERALITAT
VALENCIANA**

Conselleria de Medi Ambient,
Aigua, Infraestructures i Territori



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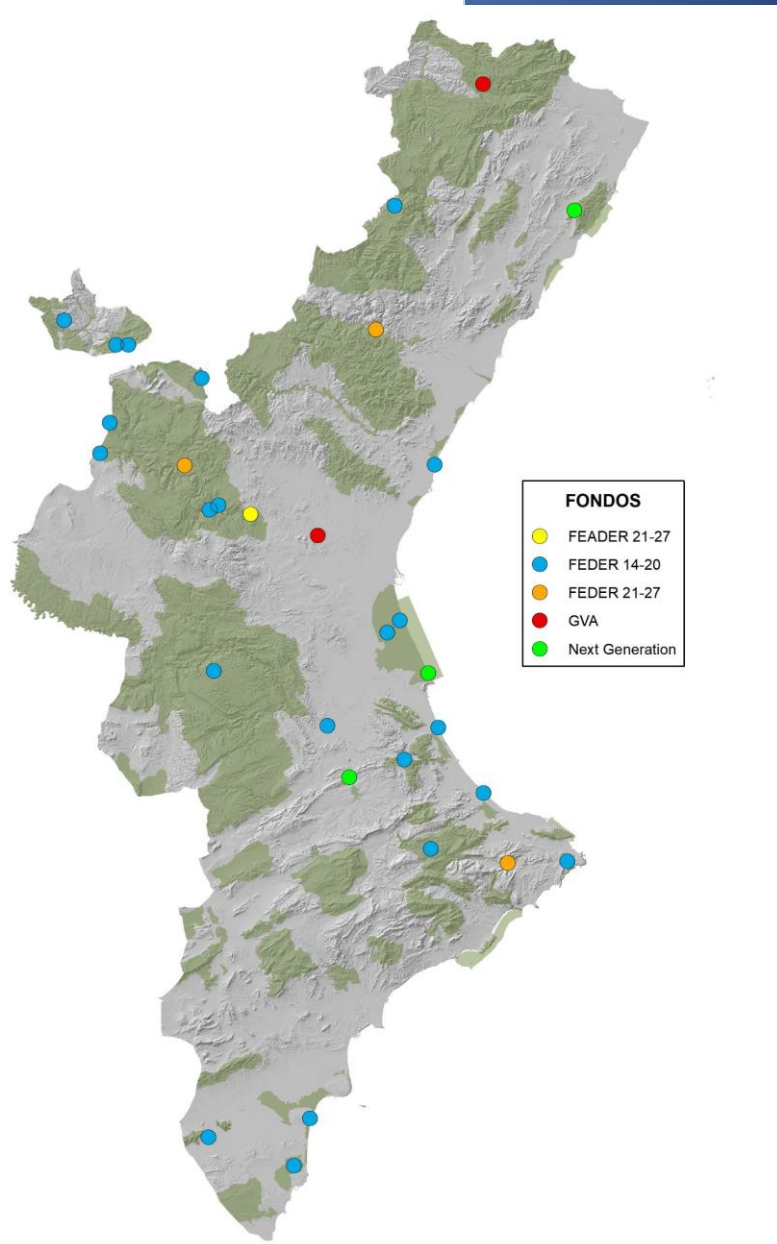
Europa invierte en las zonas rurales



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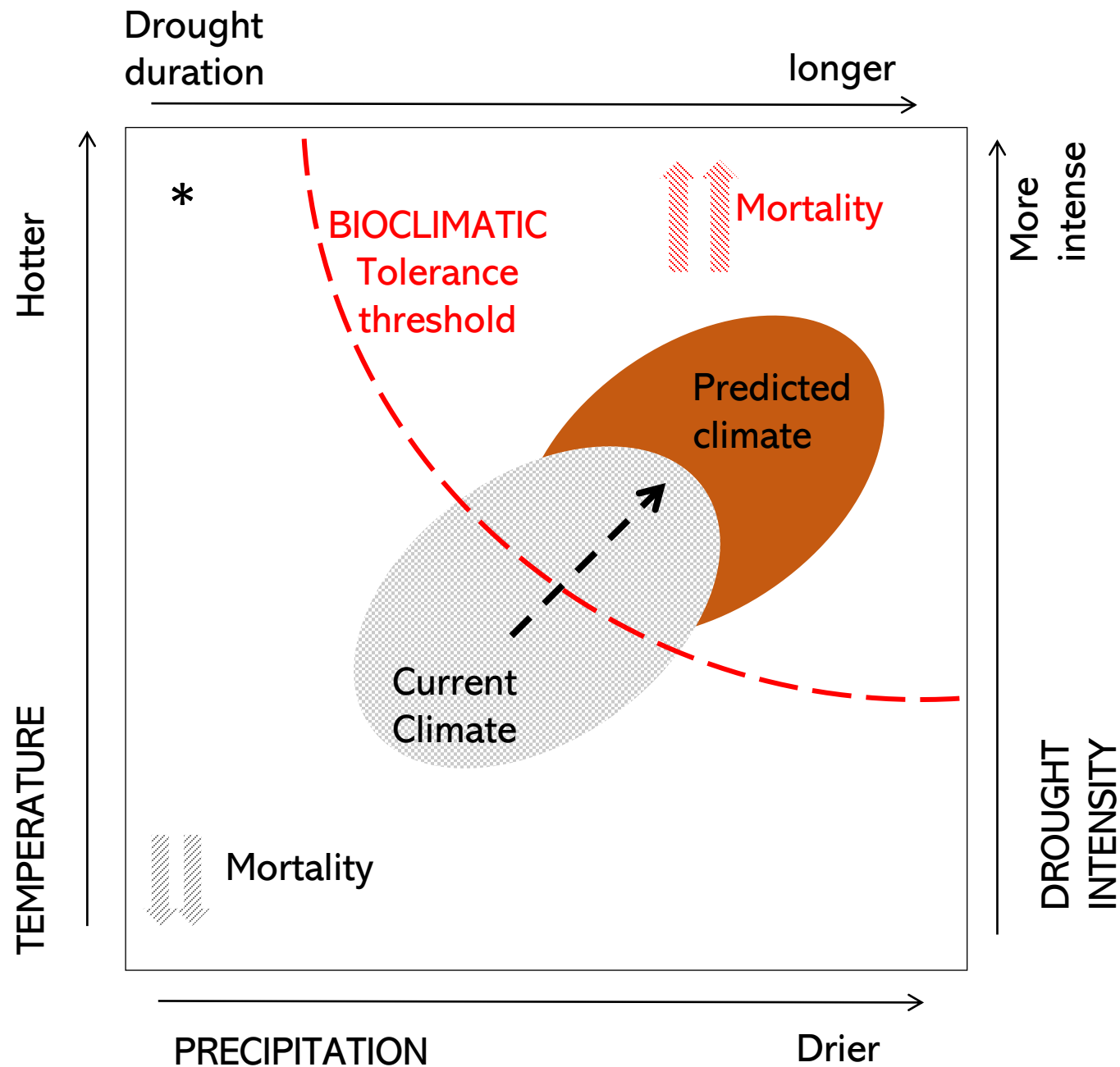


The Valencian Community (23,260 km²) is home to 68 habitats of community interest, of which 18 are priority.

38% of its surface is Natura 2000 network with 93 SCIs, 55 SACs and 40 SPAs.







Changes in drought frequency and intensity are expected to lead to:

- Mortality episodes
- Changes in species composition
- Reduction of carbon sinks



Mortality episodes of forest masses, as a result of a combination of water stress and high temperatures, are an emerging negative impact derived from climate change that is being recorded in all climatic regions of the world, including boreal, subalpine, temperate and tropical regions (Allen et al 2010).



25.02.16

Sierra de Redován (a 23 km de distancia)



Sierra de Orihuela (26 km de distancia)

25.02.16



28.10.16

Pinus halepensis plantations in semiarid conditions intensify the harshness of environmental conditions by reducing soil moisture under the canopy, lower plant cover and decrease plant richness.

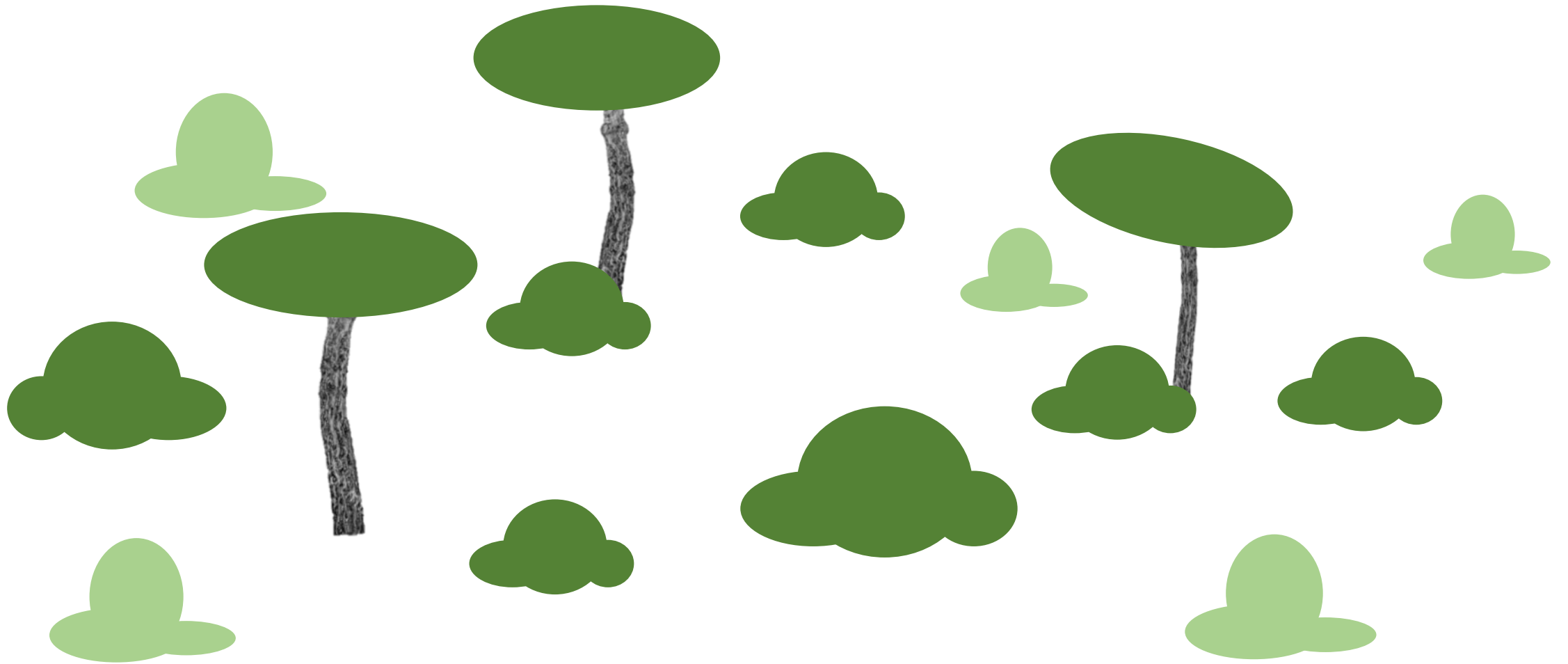




Our projects have sought to mitigate climate change impacts by:

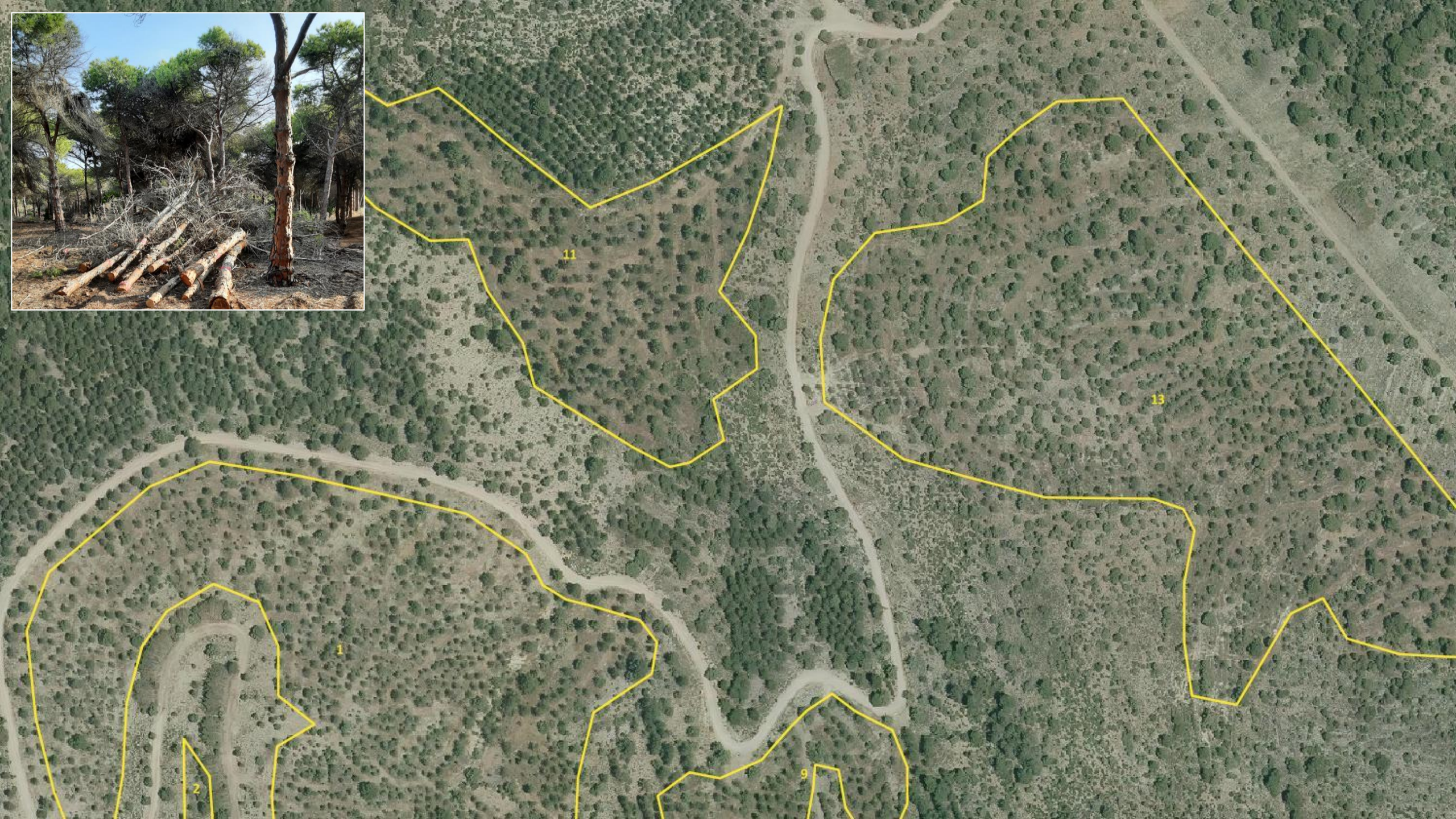
Alleviating intraspecific competition for key resources by **thinning** plantations and natural formations

Increasing functional diversity within species-poor forest plantations (planting drought tolerant resprouting shrub species)



A reduction in cover to **moderate tree densities** so as to redirect plantations and natural regeneration stands towards more natural densities where facilitation vs. competition predominates.











Drought tolerant resprouting shrub species increase the functional diversity of forest ecosystems and buffers their response to environmental disturbances linked to climate change





SITE LOCATION	FUNDS	SURFACE (ha)	WORKING DAYS	BUDGET
Albufera enebros	FEDER 14-20	10,50	254	40.568,06
Picarcho	FEDER 14-20	8,73	216	33.037,69
LIC Puebla San Miguel (SESGA)	FEDER 14-20	101,53	2.139	242.762,03
Hontanar-La Ferriza	FEDER 14-20	80,00	430	52.403,19
Montduver (Barx)	FEDER 14-20	66,99	1.426	154.726,35
LIC Penya-segats de la Marina	FEDER 14-20	148,62	2.691	286.321,26
Valls de la Marina	FEDER 14-20	103,51	1.311	181.533,85
Muela de Cortes	FEDER 14-20	971,48	33.295	1.144.138,64
Tinença	GVA	204,72		803.763,28
Sierra de Orihuela	FEDER 14-20	197,89	1.702	301.556,20
Dunas de Guardamar	FEDER 14-20	539,41	5.292	168.238,91
Puebla San Miguel	FEDER 14-20	499,15	7.511	649.355,87
Torrevieja	FEDER 14-20	399,28	2.565	382.679,07
Penyagolosa Boalar	FEDER 14-20	345,85	5.202	642.266,63
Serra d'Irta	Next Generation	93,95	1.770	417.042,33
		3.771,61	65.804	5.500.393,36



Restoration of maritime dunes invaded by exotic plants



03.06.14

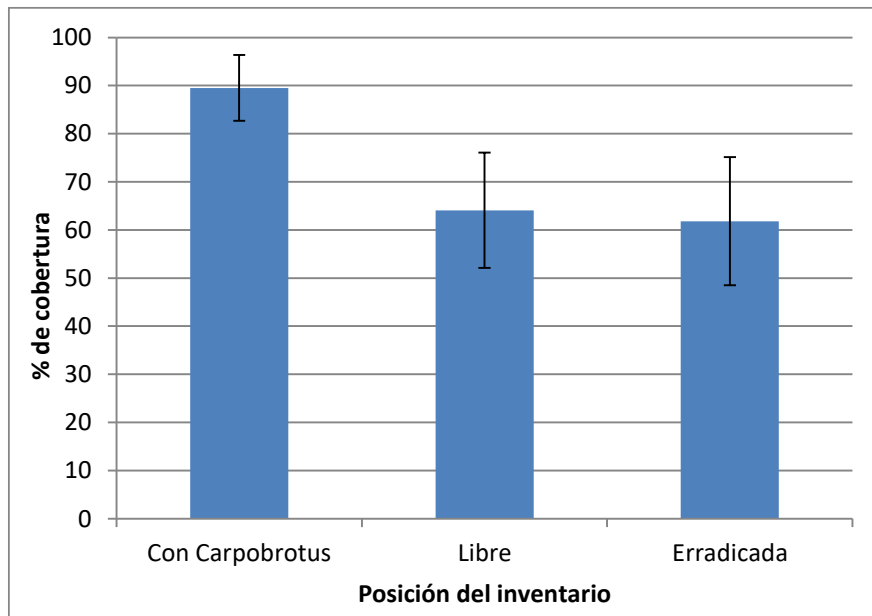
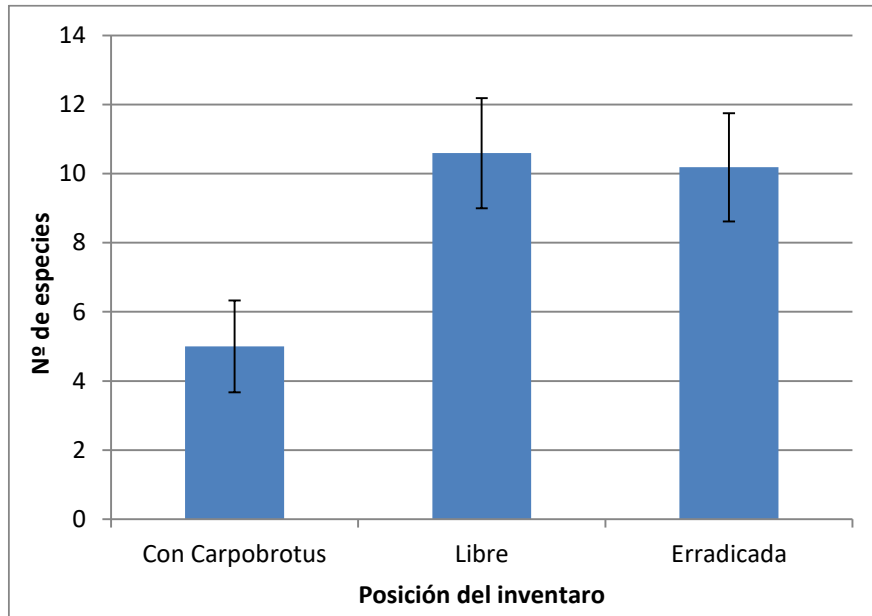












Feb 2006



May 2014



PROJECT AREA	Fondos	Ha	Budget	Volume (m3)					
				Trees	Cacti Succulent	Agaves/ Yucca spp	Carpobrotus	Arundo	TOTAL
LIC Dunes de la Safor (2 proyectos)	FEDER 14-20	66,53	133.213,84	12,00	6,00	1.415,09	500,79	4,00	1.937,88
LIC Dunas de Guardamar	FEDER 14-20	539,41	659.999,41	59,53	1.109,30	11.045,14	6.848,88	778,89	19.841,74
LIC L'Albufera	Next Generation	290,04	383.420,51	50,11	53,12	1.618,31	3.227,82	784,83	5.734,20
		895,98	1.176.633,76	121,64	1.168,42	14.078,54	10.577,49	1.567,72	27.513,81

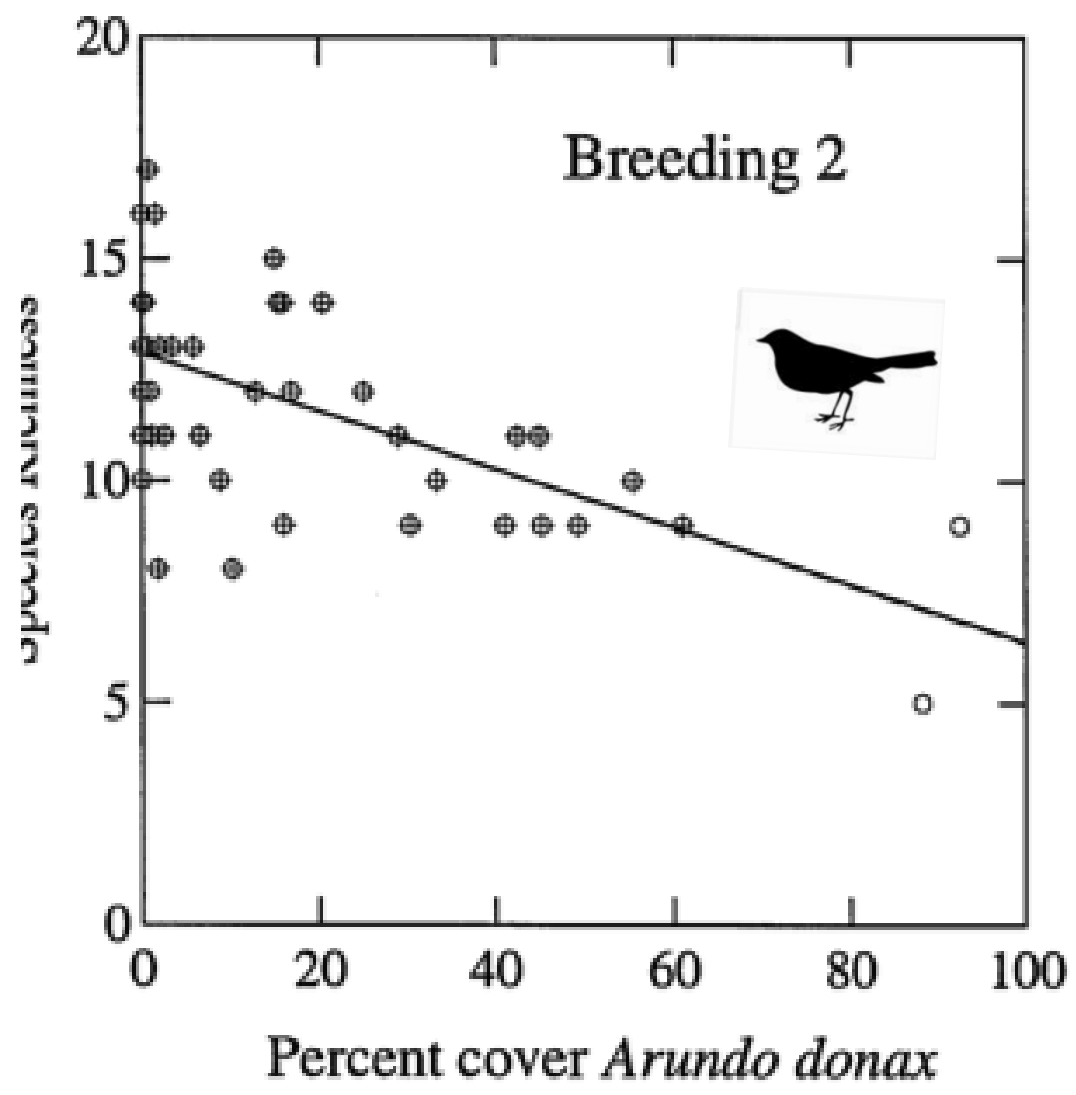


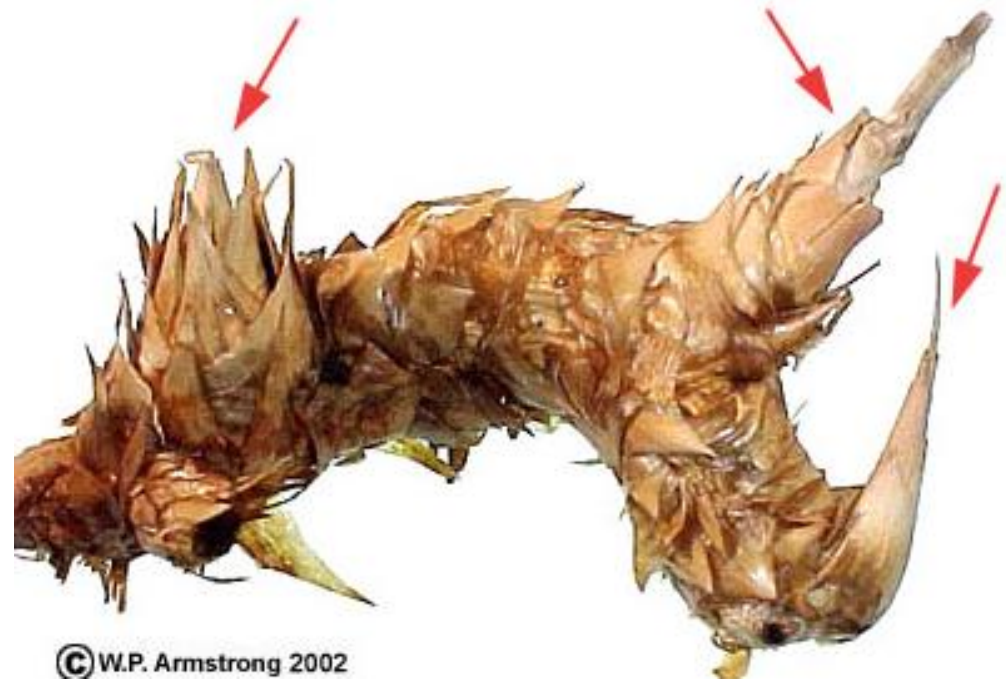
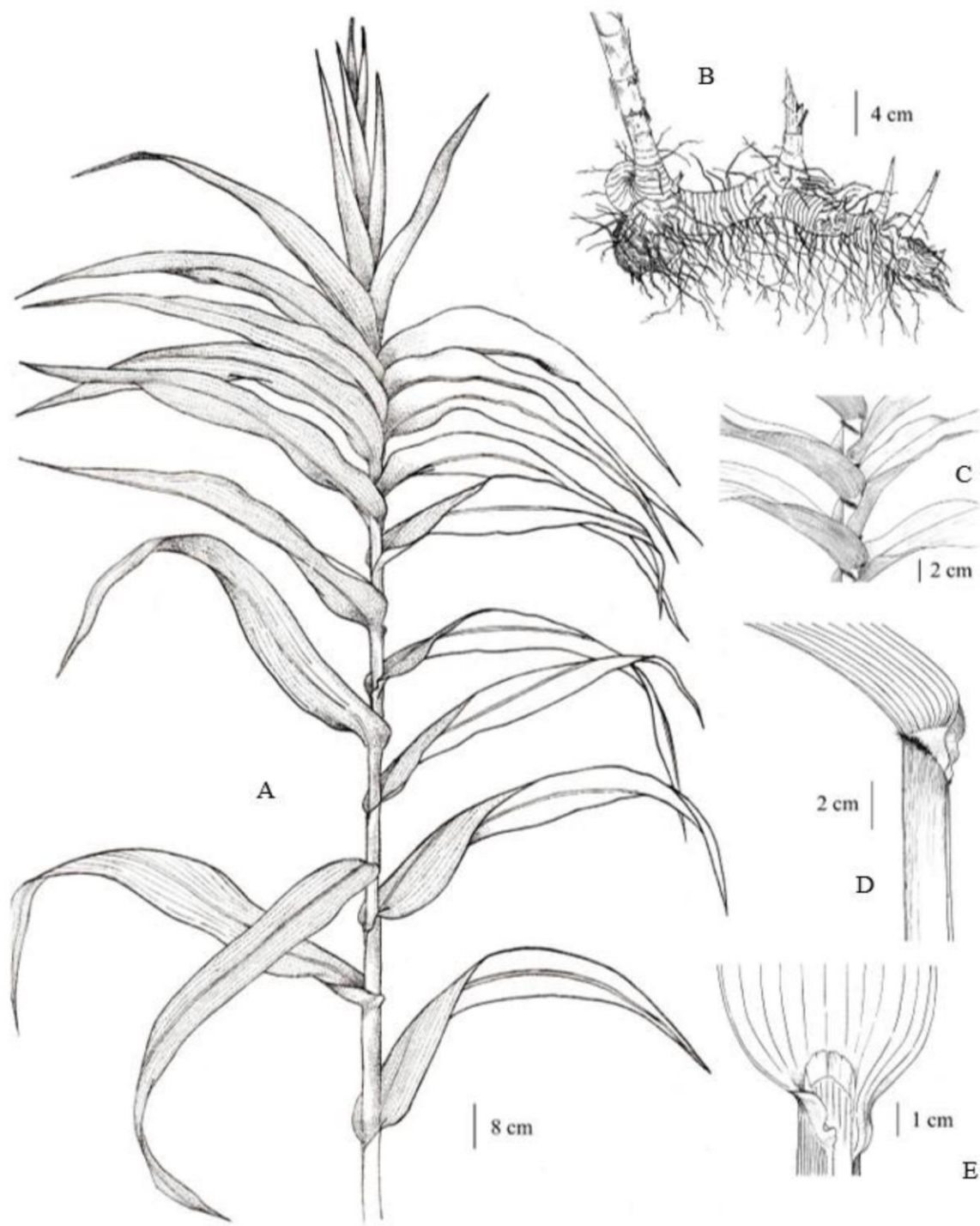




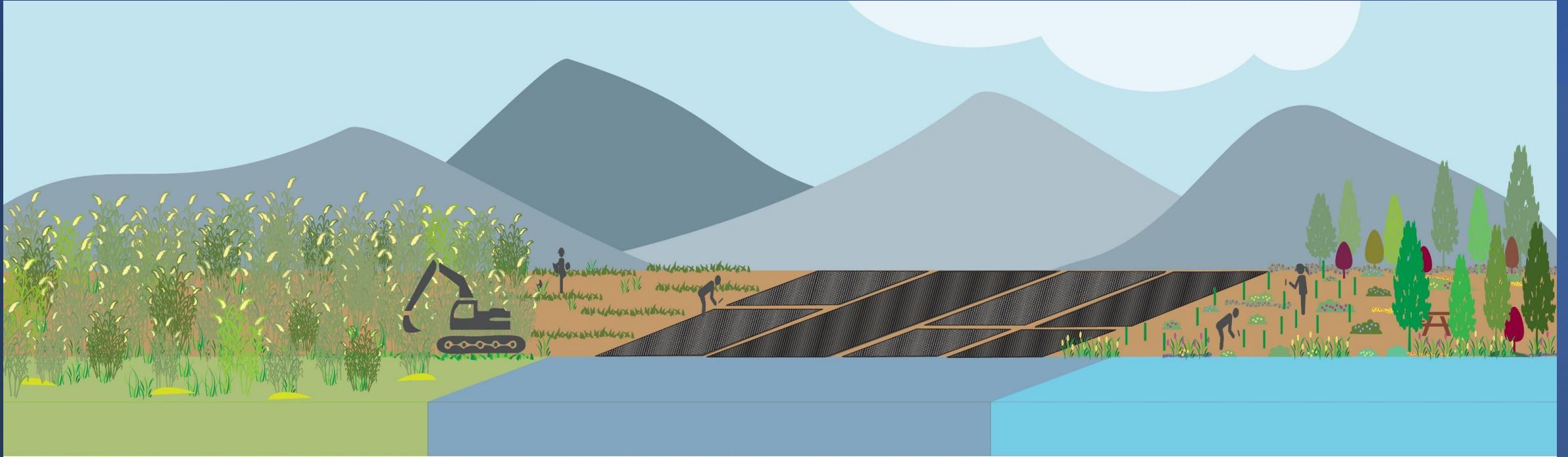
**Restoration of riverbanks invaded by Giant cane
(*Arundo donax*)**







© W.P. Armstrong 2002



CLEARING AND CRUSHING



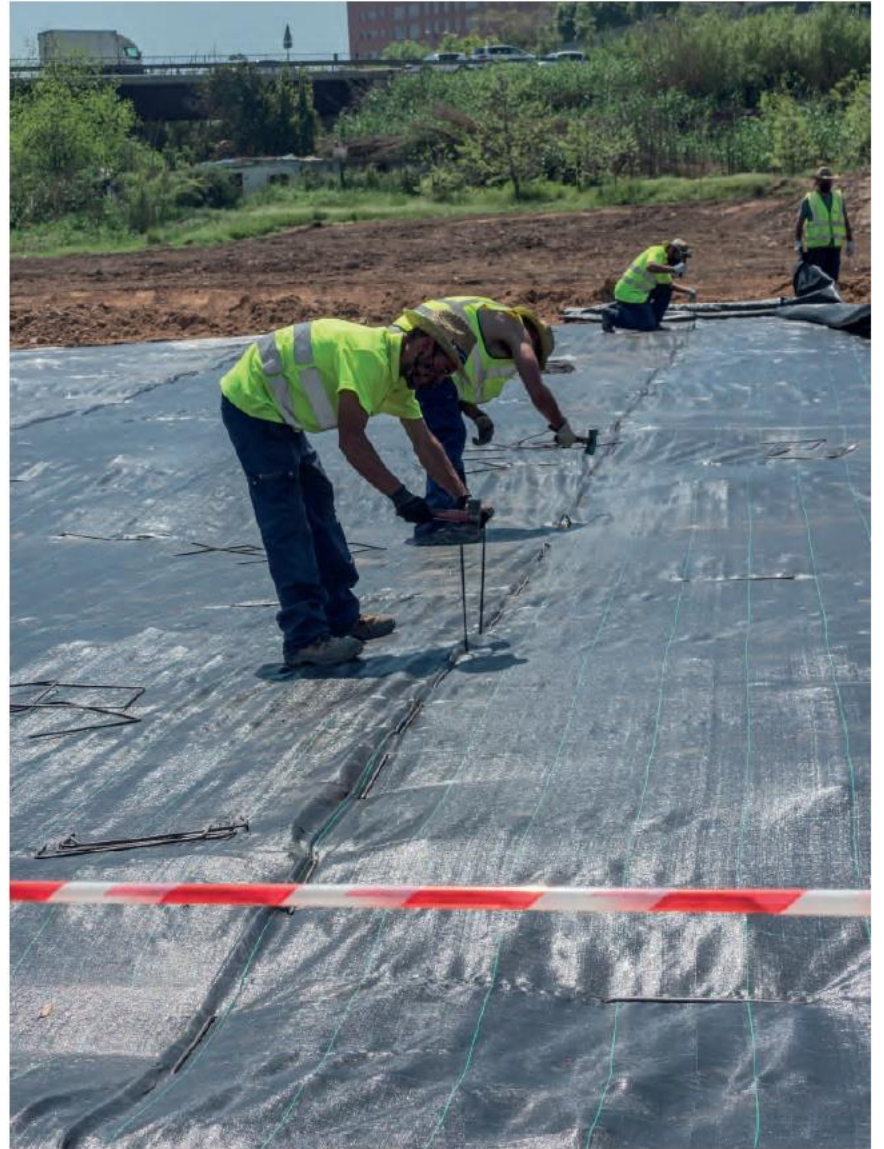
TARP INSTALLATION AND
FIXING TO SUBSTRATE



PLANTATION OF NATIVE RIPARIAN
SPECIES (MAINLY SHRUBS AND TREES)



Manises trabajos

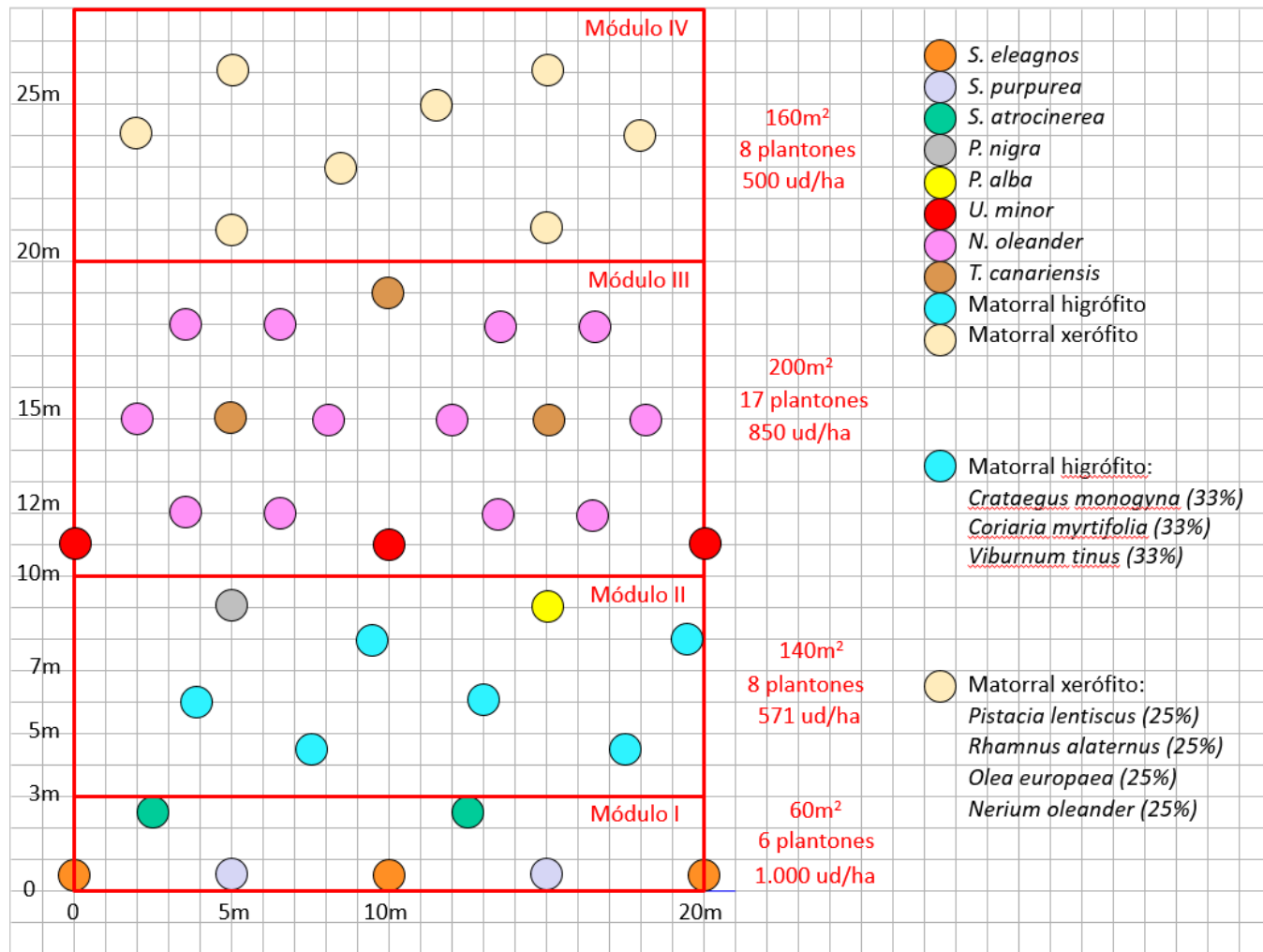














2009



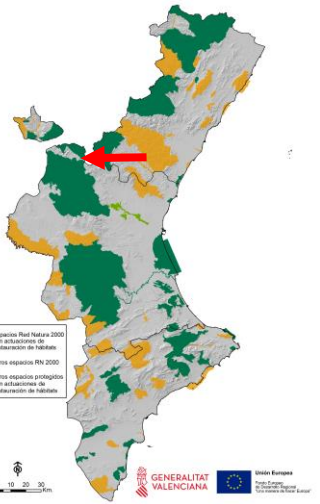
2023

PROJECT	FUNDS	Km	Ha	WORK DAYS	BUDGET
LIC Riu Xúquer	FEDER 14-20	2,01	13,35	470	141.257,99
LIC l'Albufera	FEDER 14-20	4,3	3,26172	1.171	565.019,09
ZEPA Alto Turia – Sierra del Negrete (T.M. Chulilla)	FEDER 14-20	1,8	10,47	712	192.122,88
LIC Sierra del Negrete (Río Reatillo)	FEDER 14-20	3,82	22,81	926	387.085,58
Parque Natural del Turia (T.M. de Paterna, Manises, Ribarroja del Turia y Pedralba)	GVA	4,39	41,01	6.803	1.183.304,35
LIC Curs Mitja del riu Albaida	NEXT GENERATION	2,3	15,19	1.967	701.826,40
Parque Natural del Turia (T.M. de Quart de Poblet, Manises y Paterna)	NEXT GENERATION	4,2	35,76	3.212	1.087.957,84
Parque Natural del Turia (T.M. de Chulilla, Gestalgar, Bugarra y Pedralba)	FEADER 21-27	13,2	70,34	5.465	2.026.832,32
LIC Riu Millars	FEDER21-27	16,42	128,23	8.657	3.349.050,50
LIC Riu Gorgos	FEDER21-27	4,4	19,85	1.915	756.624,10
Cuenca fluvial del Turia (T.M. Torrebaja, Ademuz y Calles)	FEDER21-27	10	22,92	1348	483.518,23
		66,84	383,19	32.646,00	10.874.599,28



- **Restoration of endemic forests with Juniperus (9560*)**
- **Juniperus thurifera**

- Objective: accelerate habitat recovery through the introduction of the structural species
- Population reinforcement of the rarest species characteristic of the habitat
- Budget: €147,925; Area: 353ha; Effort: 1,228 working days; Execution: 2018-2019.



Preparación del terreno con retroexcavadora de cadenas hasta una profundidad de 60 cm, de forma troncopiramidal con 60x60 cm en la parte superior y 40x40 cm en la base. Fotografía: Fondo fotográfico del Servicio de Vida Silvestre.





Mean survival: 91.7% after three years

Saplings 2-4 years

Sample of 16,051 juniper saplings

Rodal	Superf. (ha)	Plantones <i>J. thurifera</i>	Plantones NDR	Plantones total
1	12,34	580	330	910
2	57,54	7.070	630	7.700
3	46,33	6.583	390	6.973
4	48,37	8.236	540	8.776
5	140,86	14.130	1170	15.300
6	36,01	2.883	270	3.153
7	11,76	2.808	0	2.808
Total	353,21	42.290	3.300	45.590



Young junipers planted in 2013

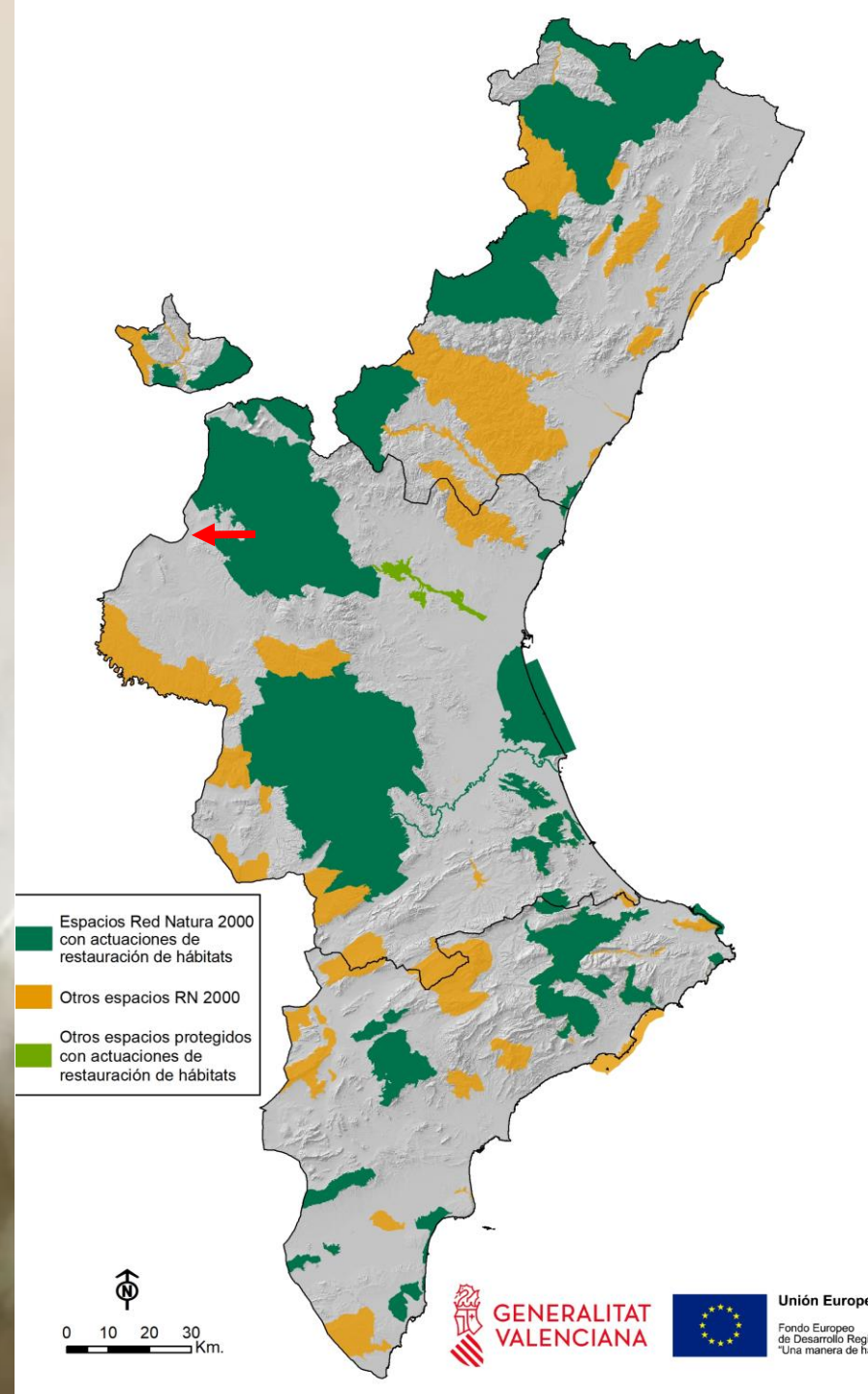


- RESTORATION OF MEDITERRANEAN TEMPORARY POOLS
 - NATURA 2000 HABITAT CODE 3170
- OBJECTIVES:
- Recovery of ecosystem hydrology: flood/desiccation cycles
 - Restoration of ephemeral plant and animal communities
 - 64.949€; 1,5ha; year 2016



LAVAJO
DEL TÍO BERNARDO

LAVAJO
DEL JARAL



Restoration of a mediterranean temporary pool. Lavajos de Sinarcas (Valencia, Spain).



Goal

Recovery of the animal and plant communities in a shallow mediterranean temporary pool whose hydrology and morphology had been profoundly altered by the purposeful excavation of its basin back in 1978.

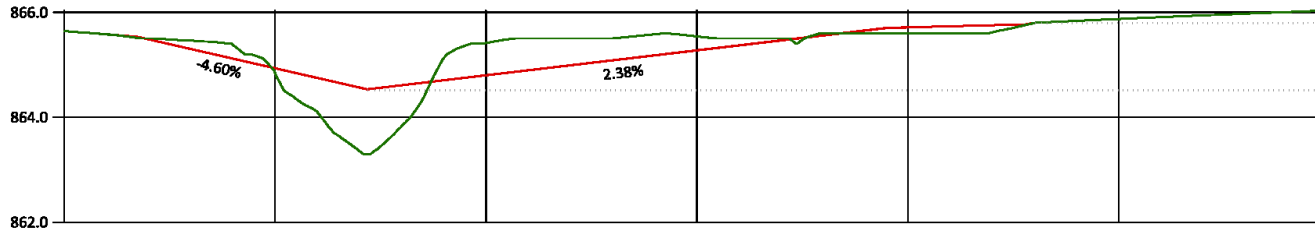
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Description

The original morphology and the characteristic hydrology (flood and desiccation cycles) of the excavated pool were recovered by means of filling with natural substrate and careful reprofiling of its banks to create a gently sloping habitat with shallow waters.

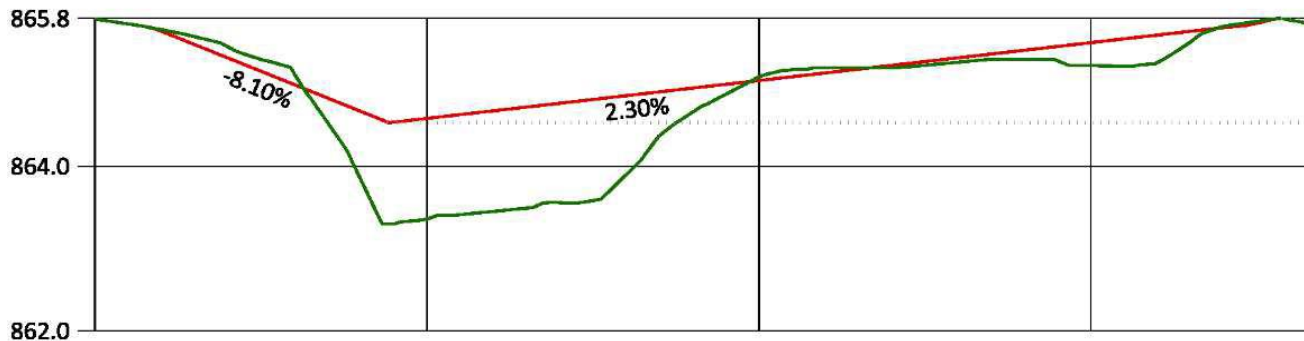
Results

- Restoration of the flood-drought cycles that characterise temporary pools
- Three-fold Increase in surface dominated by amphibian plant communities characteristic of the habitat
- Recolonisation of microcrustacean species not present before restoration, notably *Branchipus schaefferi* and *Hemidiaptomus rubaii*, characteristic of temporary pools

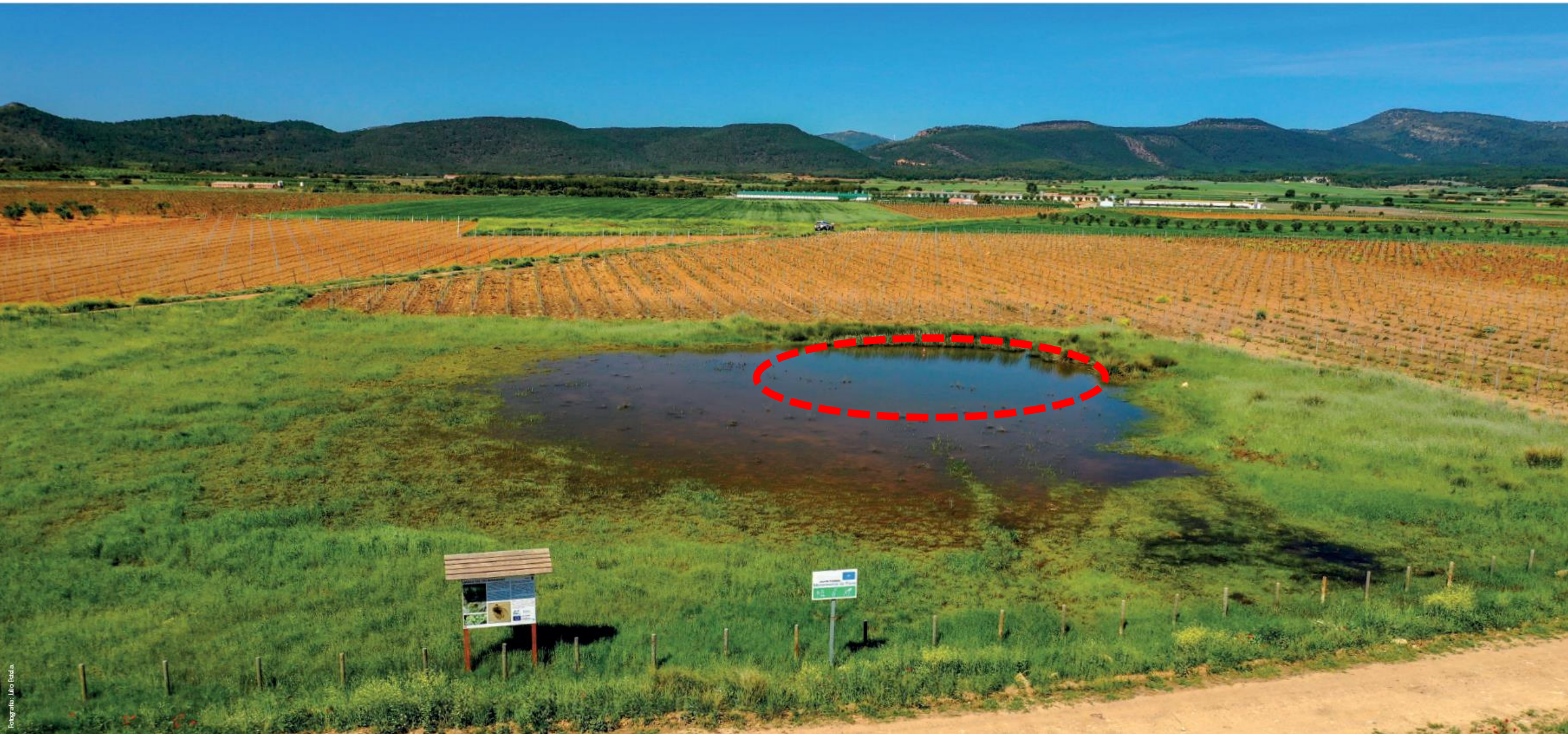


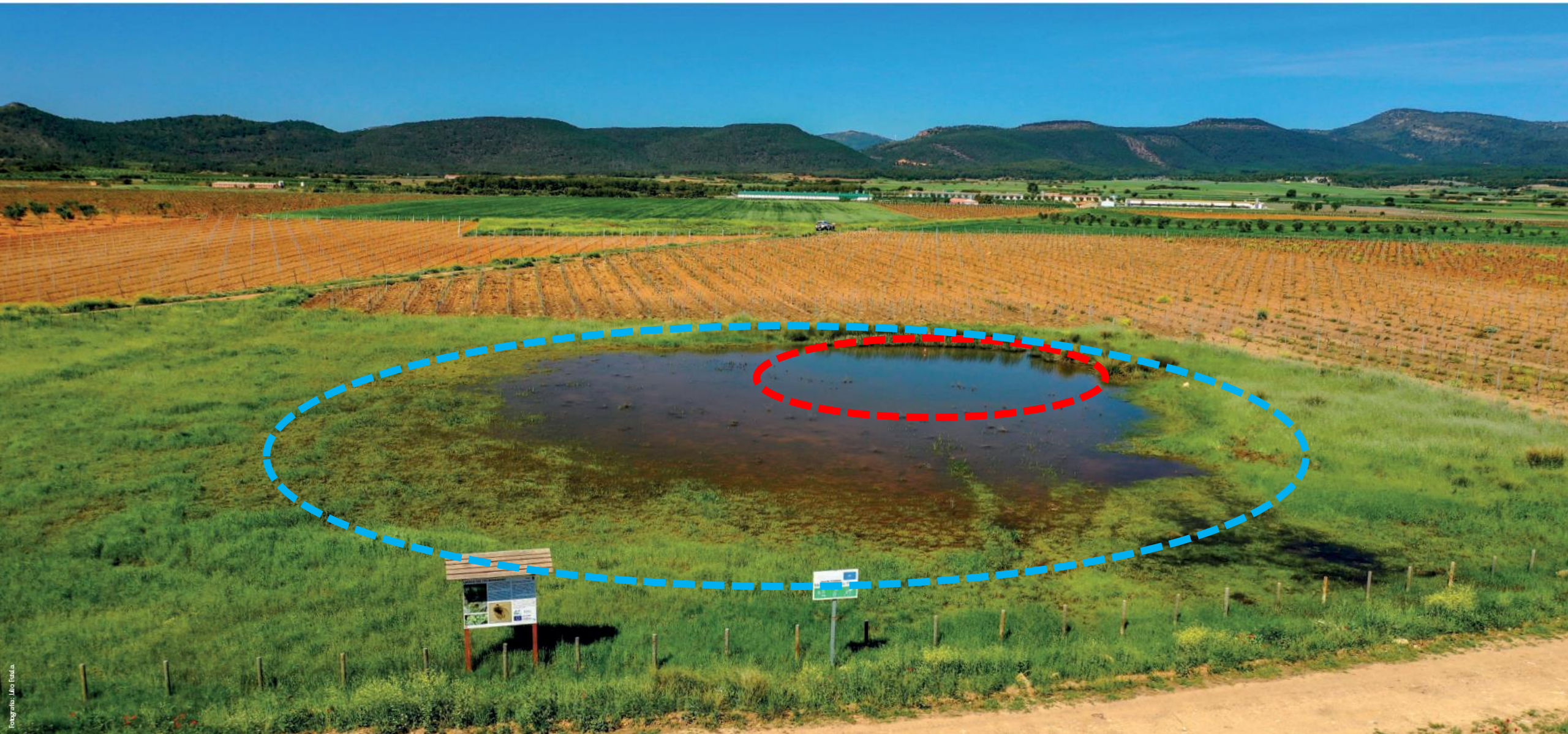
Sequence of works

- ✓ Rescue of amphibia prior to desiccation of the pool.
- ✓ Surface layer of substrate removed and set aside
- ✓ Restoration of a shallow pool morphology using materials still present in the area
- ✓ Redistribution of the surface layer in the workspace









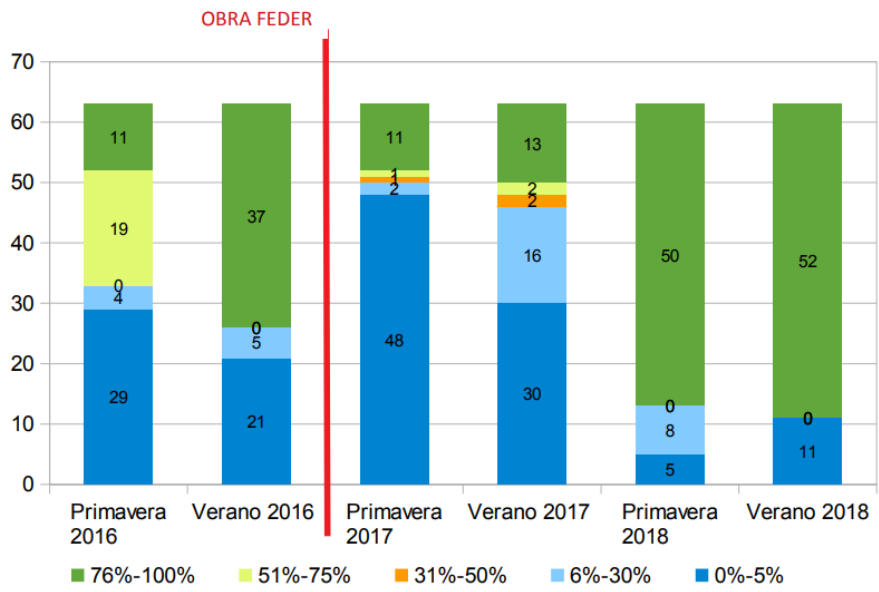
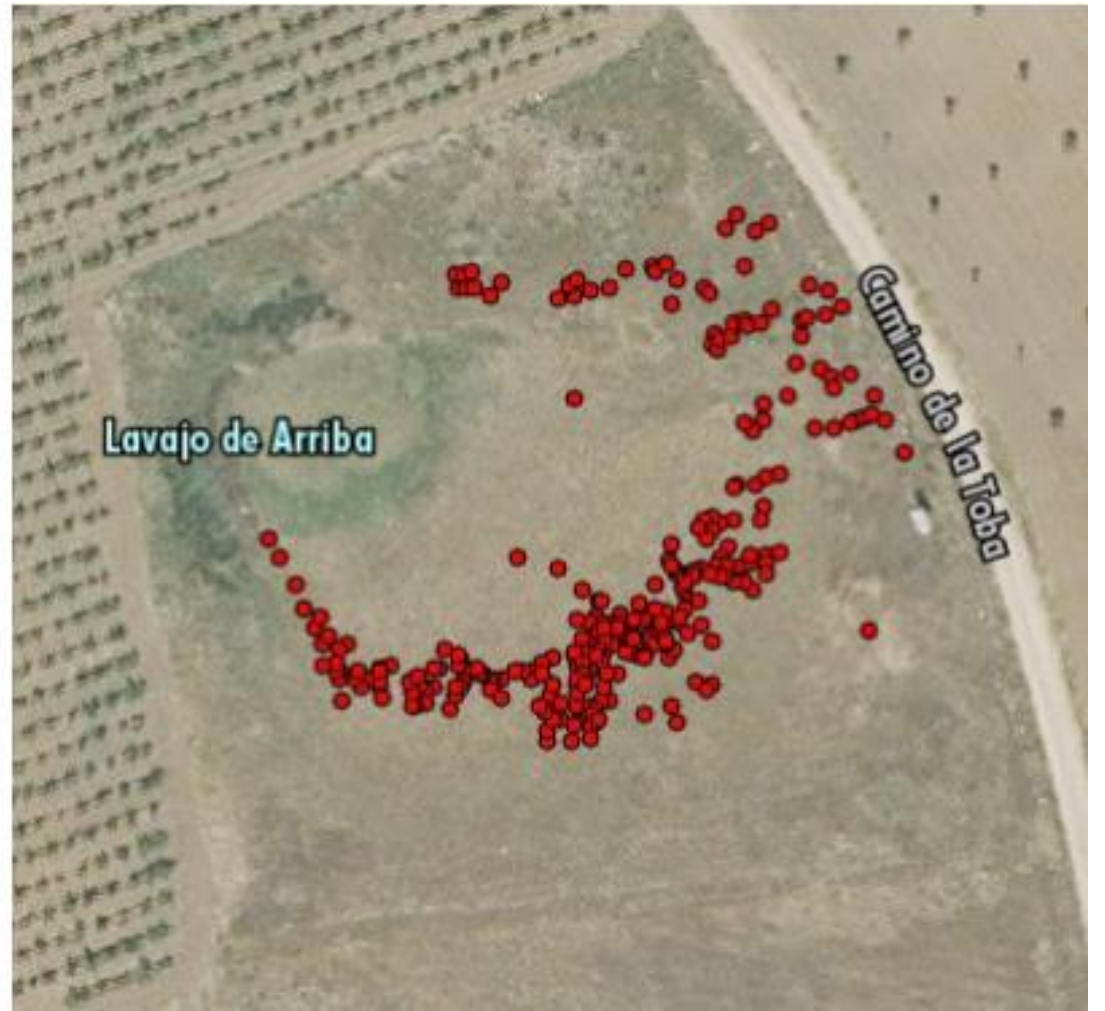


Figura 3. Evolución del transecto según el número de cuadrantes encontrados en los distintos tramos con una cobertura vegetal dividida en 5 categorías.







Conclusions

Recovery of structure and species composition of habitats is posible in some instances provided that:

Efficient methodologies are employed and

Follow-up works are carried out in subsequent years to consolidate the initial works/investments

Society's expectations are taken into account